

OFFICE OF CONGRESSMAN EARL BLUMENAUER
APPROPRIATIONS REQUEST FORM
FISCAL YEAR 2011

Instructions

1. Please complete the entire form. **All fields are required.**
2. Please do not **bold**, underline, or *italicize* responses.
3. Request forms must be submitted as a Word document.
4. All completed request forms and any supplemental materials must be submitted via email to:
Appropriations.Blumenauer@mail.house.gov
5. Please do not send more than one request per email.
6. All completed request forms must be submitted no later than **Friday, February 26, 2010.**
7. If you do not receive an email confirming receipt of your request within 48 hours of submission, please contact Stephanie Cappa in Congressman Blumenauer's Washington, D.C. office at 202-225-4811.

PLEASE NOTE: All appropriations requests submitted to Congressman Blumenauer's office will be made public on his website, as required by the House Committee on Appropriations.

Project Details

1. Project title:

Northwest Manufacturing Initiative

2. Organization name and address (the recipient of the funds):

Manufacturing 21 Coalition
1100 SW Sixth Avenue
Suite 1425
Portland, OR 97204
The project will benefit SW Washington (primarily Clark County) and Oregon.

3. Contact information

a. Project's primary contact:

Norman Eder, Executive Director

b. Daytime telephone number/ mobile phone number:

503.720.1859

c. Email Address:

norme@cfmpdx.com

d. Project location (if different than organization's address):

Project funds will be distributed to the following partners:

Oregon Institute of Technology
3201 Campus Drive
Klamath Falls, Oregon 97601

Portland State University
724 SW Harrison
Portland, OR 97201

University of Oregon
Eugene, OR 97403

Washington State University, Vancouver
14204 NE Salmon Creek Avenue
Vancouver, WA 98686

Worksystems, Inc. (Workforce Training throughout Oregon and SW Washington)
111 SW 5th Avenue Suite 1150
Portland, OR 97204

4. Please describe the requesting organization's main activities.

The goal of the Manufacturing 21 Coalition is to support the growth and development the Northwest's manufacturing economy, which now comprises over 20% of all economic activity in the region. MFG 21 focuses on two areas – the expansion of a skilled, work ready work force and an increase in the capacity of the region's colleges and universities to support the applied innovation needs of manufacturing companies. MFG 21 does not directly operate programs in either of these areas. The coalition works with community providers of research and training services to influence their programs and to direct investment into high value activities, especially those areas that support the US Department of Defense supply chain of services and products.

5. Is this organization a public, private non-profit, or private for-profit entity?

Private non-profit. Manufacturing 21 Coalition is a 501c(6) organization.

6. From what federal agency and account are you requesting funds (Please be specific –e.g., Department of Housing and Urban Development, Economic Development Initiatives account)?

Dept. of Defense, Defense Logistics Agency – Industrial Preparedness

Research Development, Test and Evaluation – RDT&E
PE Number – 0708011S
Line Number – 245

7. Briefly describe the activity or project for which funding is requested (no more than 500 words).

The Northwest Manufacturing Initiative is part of a long-term investment strategy designed by industry leaders to concentrate federal, state, public and private resources to serve the needs of the Department of

Defense by building the capacity of an entire region's manufacturing cluster to respond to immediate and long term national needs.

The areas targeted for investment in this request are:

- Advanced composite design, fabrication, and testing technologies and robotic edge breaking systems for aerospace applications;
- Additive surface engineering technologies for repair, optimization and product lifecycle enhancement for defense system components;
- Integration of automated, reconfigurable composite manufacturing systems for defense manufacturing.
- Lean, agile sustainable operations for supply chain management; and
- Incumbent workforce training grants to integrate new technologies and processes into the defense manufacturing environment.

8. What is the purpose of the project? Why is it a valuable use of taxpayer funds? How will the project support efforts to improve the economy and create jobs in Oregon?

The purpose of this project is to build significant new applied R&D capacities within partner academic institutions that are positioned to meet the technology needs regional defense-related manufacturing companies. This will be achieved through investments in four partner institutions; Washington State University, Vancouver, Portland State University, Oregon Institute of Technology and University of Oregon. These investments have been vetted by industry experts and are consistent with the high priority needs of manufacturing companies. The investments will support an integrated, multi-institutional approach applied research and development and build the long-term capacities of the partner institutions to deliver critical applied research to industrial partners.

Southwest Washington and Oregon have a large and diverse metals manufacturing and fabrication industrial base, much of which serves the defense logistics supply chain. This industry supports hundreds of companies and is a leading source of living wage jobs.

The FY 2011 NMI funds would train or retrain approximately 150 workers in the manufacturing sector. In addition, it is estimated that manufacturers in the Pacific Northwest will need 150,000 to 200,000 new workers in the coming decade. The goal of the Manufacturing 21 Coalition, supported by the Northwest Manufacturing Initiative, is to meet this challenge using federal, state, local and private resources.

9. Has this project received federal appropriations funding in past fiscal years?

Yes

9a. If yes, please provide the fiscal year, Department, Account, and funding amount of any previous funding.

FY10: \$2 million DOD, Defense Logistics Agency, Industrial Preparedness

FY09: \$1.6 million DOD, Defense Logistics Agency, Industrial Preparedness

FY08: \$1 million DOD, Defense Logistics Agency, Industrial Preparedness

FY07: \$2.5 million DOD, Defense Logistics Agency, Industrial Preparedness

Funding Details

10. Amount requested for this project:

\$2,550,000

11. Breakdown/budget of the amount you are requesting for this project (e.g., salary \$40,000; computer \$3,000):

Portland State University - \$535,000 for additive surface engineering technologies for repair, optimization, and life cycle enhancement of defense systems components

The project studies surface-coated hardened steel. It aims to advance the knowledge of performance, durability, and defects of steel products in relation to the surface coating technologies. The result will improve steel products made by the metal industry, particularly the steel products used in defense systems. This research effort will be directed at understanding, characterizing, and evaluating the interface region of the surfaced engineered deposits with the substrate, including the resulting heat affected zone region as a function of processing conditions.

Surface engineering creates material surfaces on substrates like hardened steel for protecting the steel substrates. The surface enhances durability and chemical resistance of the material. There are different processes for coating the surface. The project studies these: Plasma Enhanced Physical Vapor Deposition, Electrospark Deposition (ESD), and Cold Metal GMAW Transfer. A particular emphasis is on how the deposition defects limit the product performance. This project will produce the critical knowledge for the industry to make decisions on coating processes.

Oregon Institute of Technology - \$375,000 for smart automation systems and composites lab

OIT will coordinate with PSU, UO, WSU, partner community colleges, and industry associations through its manufacturing technology program to assist manufacturing companies to integrate new technologies into their manufacturing processes. OIT will place special emphasis on the design, and integration of automated composite manufacturing systems and applied research in reconfigurable and agile automation systems (Smart Automation) for manufacturing. This funding will provide the equipment, planning, and installation of facilities to allow the prototyping of automated composites manufacturing and the continuing research and development of agile manufacturing automation systems.

The initiative will allow OIT to expand its engineering and engineering technology programs, including critical laboratory facility updates, ensuring Oregon's polytechnic university can lead regional efforts in undergraduate teaching and workforce development, graduate education in manufacturing engineering technology, applied research projects, and innovation. The initiative will assist Oregon's defense contractors to increase their competitiveness.

University of Oregon - \$500,000 for Lean, Agile, and Sustainable Operations and Supply Chain Management

This proposal seeks to continue to expand the state's capacity in research, teaching, continuing and executive education, and consulting in the key areas of lean operations and agile supply chains, with a special emphasis on sustainability (cradle-to-cradle perspective using triple bottom line). The primary goal is to enhance the competitive capabilities of the state's and region's manufacturing asset base in terms of lean and agile processes and infrastructure to meet the strategic needs of the defense supply chains while also taking a lead in addressing the emerging challenges in their value chains with regards to the natural environment. Under the auspices of the Center for Sustainable Business Practices (CSBP) at the Lundquist College of Business, faculty with expertise in operations and supply chain management, business strategy, industrial ecology, organizational behavior, marketing strategy, consumer behavior, industrial marketing, entrepreneurship, information systems, and statistics will engage with manufacturing and service firms in Oregon and the Pacific Northwest to undertake benchmarking studies and applied problem solving research initiatives. A deeper understanding of the sustainability challenges in the defense supply chains and other related industries will also be used to develop continuing and

executive education modules. Note that some of the initial set-up and a few targeted research projects under the umbrella of this programmatic proposal are being initiated through the \$230,000 seed grant from Department of Defense (via Defense Logistics Agency) that was awarded in Fall 2008 and contracted towards the end of 2009. The seed grant is focused on research and problem solving in the areas of design for end-of-life product management and sustainability in sourcing and procurement.

Washington State University, Vancouver - \$780,000 for robotic edge breaking system for aerospace industry and research and development of advanced composite design, fabrication and testing technologies

Robotic Edge Breaking System: The Northwest is home for the aerospace industry where very large aircraft parts are designed and manufactured for commercial and military aircraft. One of the manufacturing challenges the industry faces is the edge breaking process. When an aircraft part is machined, it contains many razor sharp edges. Such sharp edges, especially around high-tolerance holes or where multiple parts mate in an assembly, are very problematic. The sharp edges need to have radii or chamfered to meet design requirements. These edges need to be finished for aircraft safety in operation since such sharp edges lead to stress concentrations, fractures and fatigue failures resulting in part failures, which can cause long down times for the airlines, or potentially a catastrophic incident. They also need to be rounded for the safety of the workers who are handling these parts. Finally, paint will not stick to the sharp edges very well, causing rework and driving up manufacturing costs.

Currently, edge breaking is done mainly by hand finishing. The part drawings have specific high tolerances and radii for the roundness of the edges. Fabrication workers smooth the edges by hand using various hand tools. The results are not always accurate and repeatable. Often parts are rejected and have to be reworked. An estimated 30% of the entire flow of parts through the factory is held up by the delays due to the hand finishing process. This is very costly. Furthermore, the working conditions of the hand finish workers are not desirable. Repetitive stress injuries, dust, noise, and air quality are significant health issues. Hand finishing is one of the least desirable occupations in these manufacturing environments.

This research aims to explore development of a robotic system for edge breaking. The system can increase accuracy and repeatability of the parts. It can process them faster than the humans, reducing or eliminating the delays in part flow. It can also take the hand finish workers out of the undesirable work environment.

Research and Development of Advanced Composite Design, Fabrication and testing technologies: Fiber reinforced plastic (FRP) composite materials offer many advantages over metals, such as high specific strength and stiffness, excellent formability, and corrosion resistance. Increasing efforts have been made to incorporate these materials into the design of various components and structures for commercial/military craft as well as renewable energy systems. However, FRP composites exhibit some distinct disadvantages such as defects, limited performance data, limited repair technology, and high fabrication cost. Even some barriers exist for applying FRP composites, series of attempts have been made on improving manufacturing/repair technologies and properties of FRP composites.

The objective of long-term study is to develop a firm understanding on FRP composite defects associated with fabrication and repair technologies for commercial/military craft and renewable energy systems (wind turbine blades).

Workforce training – \$360,000

The workforce elements of this proposal build upon the region's existing system of community colleges and work force boards. It leverages private and community resources (local, state, and federal) and brings them in to alignment around the training needs of companies in the defense logistics system.

12. What is the total cost of the project?

We expect this phase of the Northwest Manufacturing Initiative project to cost \$8 million from 2011-2013.

13. Is this project scalable (i.e., If partial funding is awarded, will the organization still be able to use the funds in FY 2011?)?

Yes

14. What other funding sources (local, regional, state) are contributing to this project or activity? (Please be specific about funding sources and funding amounts)

The 2007 Oregon Legislature provided \$2.8 million for equipment, new faculty, and applied research. Portland State University, OIT, and Washington State University, Vancouver will provide ongoing support for newly developed programs on their campuses. University of Oregon, Charles H. Lundquist College of Business, will provide a 60% match for all invested funds and provide ongoing support for programs.

The Northwest Manufacturing Initiative has also been instrumental in focusing Department of Labor training resources through local workforce investment boards and a \$5 million US Department of Labor WIRED grant to the region. We expect that our success will continue to assist the region to increase the effectiveness of funds spent on workforce training and recruitment.

15. Please list public or private organizations that have supported/endorsed this project.

Washington State University – Vancouver
Robert Bates, Director of Research and Graduate Education
360.546.9254

Southwest Washington Workforce Development Council
Lisa Nisenfeld, Executive Director
360.567.1070

Worksystems Inc. (Multnomah and Washington Counties, Workforce Investment Board)
Andrew McGough, Executive Director
503.478.7371

Oregon Workforce Partnership (State wide organization)
Agnes Balassa, Executive Director
503.636.1404

Southern Oregon Economic Development Inc. (Medford)
Ron Fox, Executive Director
541.773.8946

Portland State University
Renjeng Su, D.Sc.
Maseeh College of Engineering and Computer Science

503-725-8393

Oregon Institute of Technology
Chris Maples, President
541.885.1103

Charles H. Lundquist College of Business, University of Oregon
Jim Bean, Dean
541.346.3300

Clackamas County
Lynn Peterson, Commissioner
503.655.8581

Portland Business Alliance
Sandra McDonough
503.224.8684

Lane Workforce Partnership
Chuck Forster
541.682.3800

City of Portland
Sam Adams
503.823.3008

Please return this form no later than Friday, February 26, 2010 via email to:

Appropriations.Blumenauer@mail.house.gov

Washington, D.C. Appropriations Contact for Rep. Earl Blumenauer: Stephanie Cappa, 202-225-4811, Stephanie.Cappa@mail.house.gov

Oregon Appropriations Contact for Rep. Earl Blumenauer: Sarah Masterson, 503-231-2300, Sarah.Masterson@mail.house.gov